

# To Solve the Labor Shortage Problem (Vol. 1)

The Actual State and Issues of Non-Desk Workers

May 31, 2023

## 1. Introduction

Labor shortage refers to a situation in which companies are unable to attract the necessary human resources to conduct business and thus are unable to execute their business as they would like. The shortage of human resources in the labor market is a major social issue in Japan, where the population continues to age and decline.

The degree of a labor shortage is generally represented by the jobs-to-applications ratio, which was 1.16 overall in 2022 (for full-time and part-time jobs). When this ratio is broken down by occupation, the ratio was lower for occupations that mainly involve desk work in offices (0.63), while it was almost three times higher for occupations that require work in various sites instead of desk work (“non-desk work”) (1.85), indicating that the latter has more occupations that face a higher degree of labor shortage.\*<sup>1</sup>

Furthermore, according to *Population Projections for Japan: 2021 to 2070* by the National Institute of Population and Social Security Research, the working-age population (population aged 15–64) is expected to decline significantly from approximately 75 million in 2020 to approximately 62 million in 2040. Solving the labor shortage problem will be essential for Japan to maintain its national strength in the medium to long term and for companies and households to stably sustain the economic and consumption activities they usually carry out.

In this project, we will focus on non-desk work and **non-desk workers**, the core of the labor shortage problem, and plan to identify the issues and clarify the direction of measures to solve Japan’s labor shortage problem in multiple reports.

\*1 Excludes certain groups of workers with characteristics of both desk work and field work and workers not classifiable by occupation.

## 2. Desk Workers and Non-Desk Workers

Companies and the workers who work there have played a significant role in the development of Japan’s economy. Industries have been segmented according to the changes of the times, and workers working in various companies have contributed to building a more prosperous society. It goes without saying that workers will continue to support and drive the Japanese economy in the future.

Workers are generally divided into white-collar and blue-collar workers. The former are mainly engaged in clerical work in the office (at the desk) and can be described as “**desk workers**.” The latter, also referred to as essential workers especially during the COVID-19 pandemic, do not work at a desk but mainly in the “field” and can be rephrased as “**non-desk workers**.”

Looking back at Japan’s labor market in the past, the demand for desk workers had risen in line with the period of high economic growth and the accompanying transformation of the industrial structure. However, in today’s Japan, labor supply and demand have changed as the population has begun to decline, the working-age population shrinks, and workers generally age, resulting in a severe shortage of labor,

especially non-desk workers, in a wide range of workplaces. In the near future, the demand for desk workers may reach a ceiling due to the advancement of artificial intelligence (AI) and digital transformation (DX), while the demand for non-desk workers may increase further depending on the occupation.

### 3. What Is a Non-Desk Worker?

In this chapter, we will describe what a non-desk worker is qualitatively. What types of workers work in the field and not at a desk?

Specifically, non-desk workers include a wide variety of workers, such as construction workers, care service workers, security guards, janitors, drivers, delivery workers, building superintendents, merchandise sales workers, waiters and waitresses, manufacturing plant workers, doctors, nurses and other health care workers, railway drivers, ship and aircraft operators, and agricultural, forestry and fishery workers.

The Standard Occupational Classification for Japan is widely used to classify occupations in Japan and is the basis for the statistical survey of the population census. **Figure 1** shows the classification of workers into “desk workers,” “non-desk workers,” “desk and non-desk workers,” who have the characteristics of both desk workers and non-desk workers, and “workers not classifiable by occupation.”

**Figure 1: Worker Classification by Occupation**

<Population Census Occupational Categories>

Desk workers

**Administrative and managerial workers:** Management government officials; officers of companies and organizations; other administrative and managerial workers

**Professional and engineering workers (portion):** Researchers; engineers; legal workers; management, finance and insurance professionals; authors, journalists, editors

**Clerical workers:** General clerical workers; accountancy clerks; production-related clerical workers; sales clerks; outdoor service workers; transport and post clerical workers; office appliance operators

Desk and non-desk workers

**Professional and engineering workers (portion):** Health care workers; social welfare specialist professionals; teachers; workers in religion; artists, designers, photographers, film operators; musicians, stage designers; other specialist professionals

**Sales workers (portion):** Sales workers

Non-desk workers

**Sales workers (portion):** Merchandise sales workers; quasi-sales workers

**Service workers:** Domestic support service workers; care service workers; healthcare service workers; domestic hygiene service workers; food and drink preparatory workers; customer service workers; residential facilities, office buildings and other management personnel; other service workers

**Security workers:** Security workers

**Agriculture, forestry and fishery workers:** Agriculture workers; forestry workers; fishery workers

**Manufacturing process workers:** Product manufacturing and processing workers (metal products); product manufacturing and processing workers (except metal products); machine assembly workers; machine maintenance and repair workers; product inspection workers; machine inspection workers; manufacturing-related and quasi-manufacturing workers

**Transport and machine operation workers:** Railway drivers; motor vehicle drivers; ship and aircraft operators; other transport workers; stationary and construction machinery operators

**Construction and mining workers:** Construction and civil engineering workers; electric construction workers; mine workers

**Carrying, cleaning, packaging and related workers** Carrying workers; cleaning workers; packaging workers; other carrying, cleaning, packaging and related workers

Workers not classifiable by occupation

Workers not classifiable by occupation

Source: Created by Xymax Real Estate Institute based on material from Recruit Works Institute's Works Report 2022 *Work Style Reforms for Security Guards, Drivers, Construction Workers and Other Field Workers—How to Resolve the Shortage of Non-Desk Workers*.

## 4. The Characteristics of Non-Desk Workers

We will then examine the characteristics of non-desk workers to gain further understanding.

### (1) Non-desk workers support the infrastructure of daily life

The office is where companies' activities take place and where workers work and engage in production activities. However, the daily lives of each of us are supported by a large number of non-desk workers. For example, when we shop, we visit a store where a wide variety of products are sold and certain services are provided. Non-desk workers are in charge of most of the many business processes of store operations, such as the production of merchandise, transportation, inventory control, customer service, sales, delivery, facilities management, repair, cleaning and security. In other words, from a consumer perspective, stores are the infrastructure that supports our daily lives, and non-desk workers support that infrastructure.

The same applies to hotels and ryokan inns. Housekeeping, customer service, banquet and kitchen staff are almost exclusively non-desk workers. It is thanks to them that we are able to stay in clean rooms and receive certain services during our travels or business trips. As Japan, with its aging and shrinking population, aims to become a tourism-oriented country, it is the non-desk workers who will receive the vast number of inbound customers and hold the key to revitalizing the economy.

Non-desk workers also play a significant role in the office where desk workers work. It is important that offices are safe, secure, clean and tidy and that facilities are inspected regularly and managed adequately. These tasks are performed by non-desk workers such as facility managers, repair workers, janitors and security guards.

The above are just a few examples, but as you can see, non-desk workers are key to producing and delivering various services and value, supporting the infrastructure of our daily lives and building a more prosperous and sustainable society.

### (2) Many people have non-desk work experience

When considering the general life stages of the Japanese, it is likely that many of them have experience working as non-desk workers. The first part-time job that many people experience during their college years is probably a non-desk job. Desk jobs such as clerical work are probably a minority.

According to the *16th Japanese National Fertility Survey (Conducted in June 2021)*, released in September 2022 by the National Institute of Population and Social Security Research, about 70% of women continue to work after giving birth to their first child, partly due to the spread of maternity and childcare leave programs (for reference: The percentage had long remained at around 40%, and more women were retiring after childbirth until around 2010). When these women take up part-time work after childcare has peaked, they tend to choose jobs in the service sector, such as sales and restaurants, as well as factory work.

When office workers look for a new job after retirement, they often expand their options to include non-desk jobs such as security, delivery and cleaning.

## 5. Actual State and Issues of Non-Desk Workers as Shown in Data

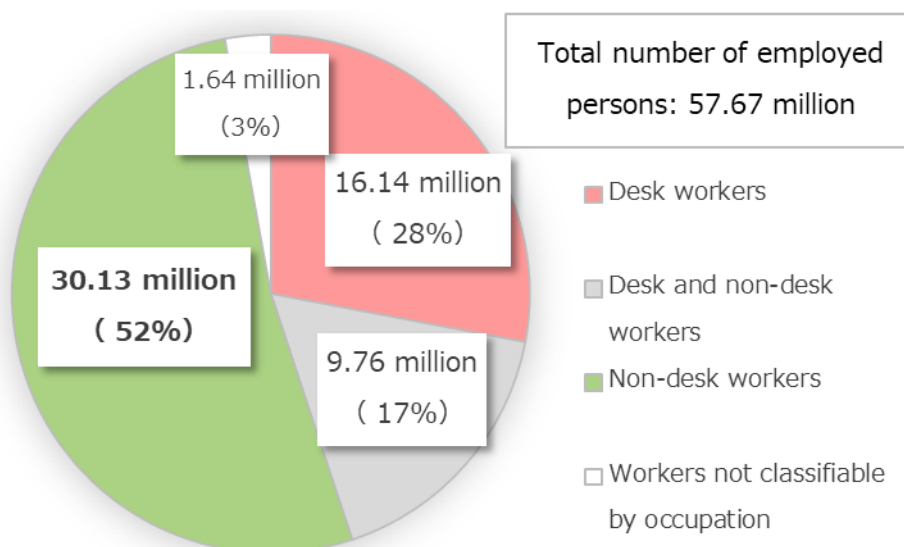
In this chapter, we quantitatively examine the actual state and issues of non-desk workers using census and other data.

### (1) The actual state of non-desk workers

#### ① Accounting for more than half of all workers

Looking at the number of workers by occupation in the Population Census, non-desk workers (30.13 million) are about 1.9 times the number of desk workers (16.14 million) and account for more than half of the total number of workers (57.67 million) (**Figure 2**). A likely factor is that non-desk workers cover a wider range of occupations than desk workers, as we confirmed in **Figure 1**.

**Figure 2: Breakdown of Workers**

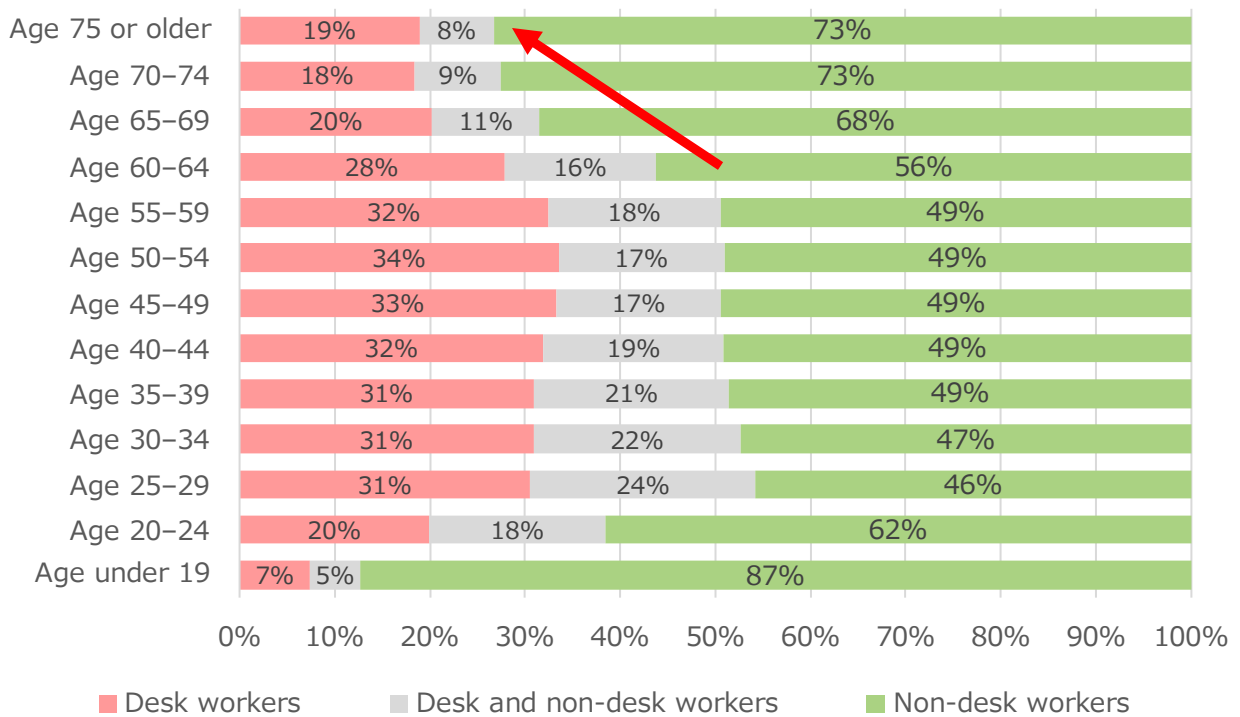


Source: Created by Xymax Real Estate Institute based on the Population Census by the Ministry of Internal Affairs and Communications.

② A high proportion of older workers

Looking at the percentage of workers by age group shows that the percentage of non-desk workers increases after the age of 60 (Figure 3). Possible factors include the relative lack of new recruitment of older people for desk jobs since desk jobs usually have a mandatory retirement age, while non-desk jobs do not have as strict an age limit as desk jobs, allowing older people to continue working, and the abundance of non-desk jobs for desk workers looking for a new job after retirement.

Figure 3: Percentage of Workers by Age Group

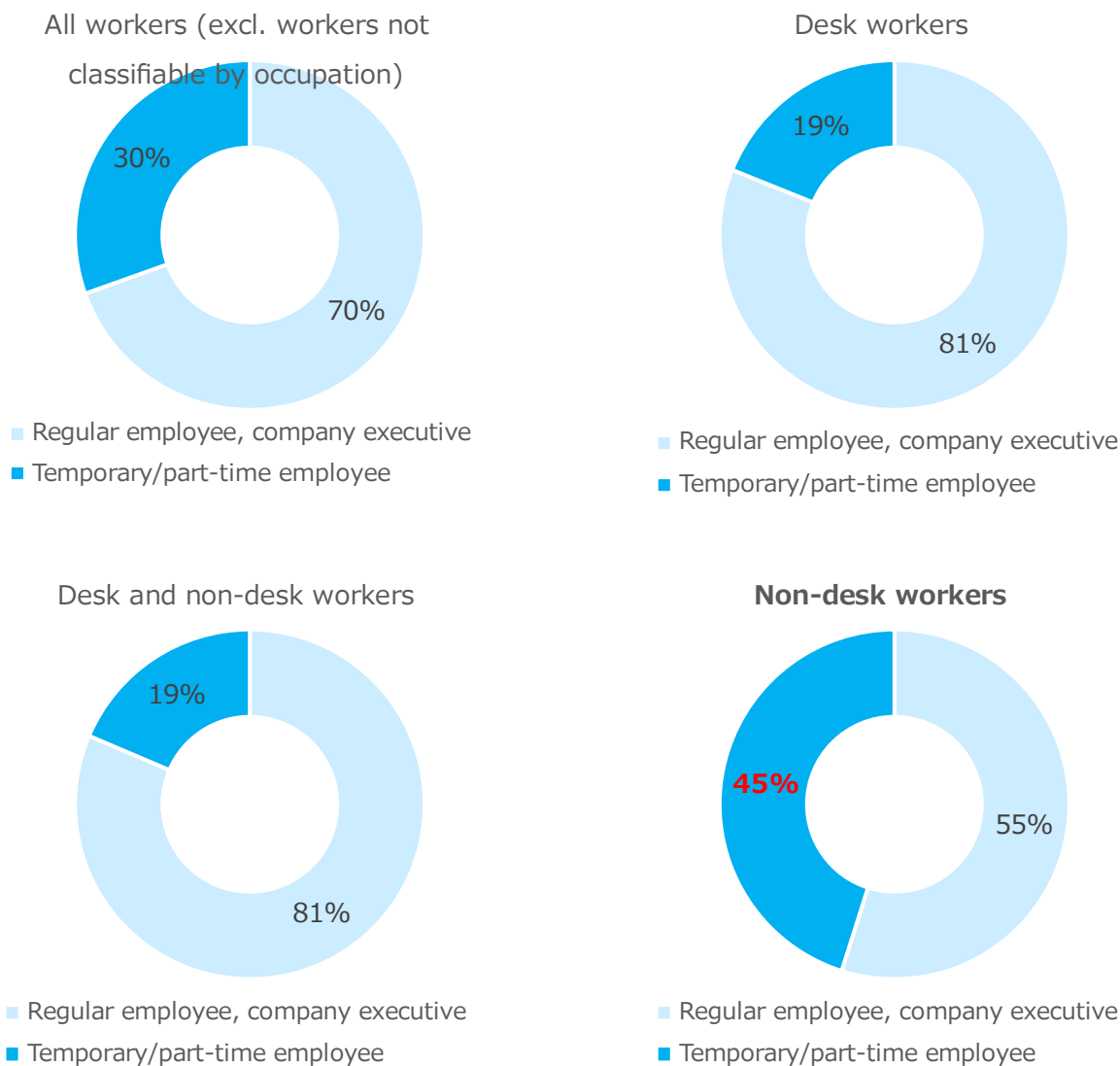


Source: Created by Xymax Real Estate Institute based on the Population Census by the Ministry of Internal Affairs and Communications.

③ **A high percentage of non-regular employees (temporary and part-time employees)**

Looking at the percentage of workers by employment type indicates that non-regular (temporary and part-time) employees account for 45% of non-desk workers, a higher percentage than for desk workers (19%) (Figure 4). Possible factors include the abundance of jobs that do not require expertise or technique beyond a certain level and flexible working hours, making non-desk jobs the preferred choice for many people, such as students, people raising children and older people.

**Figure 4: Percentage of Workers by Employment Type**



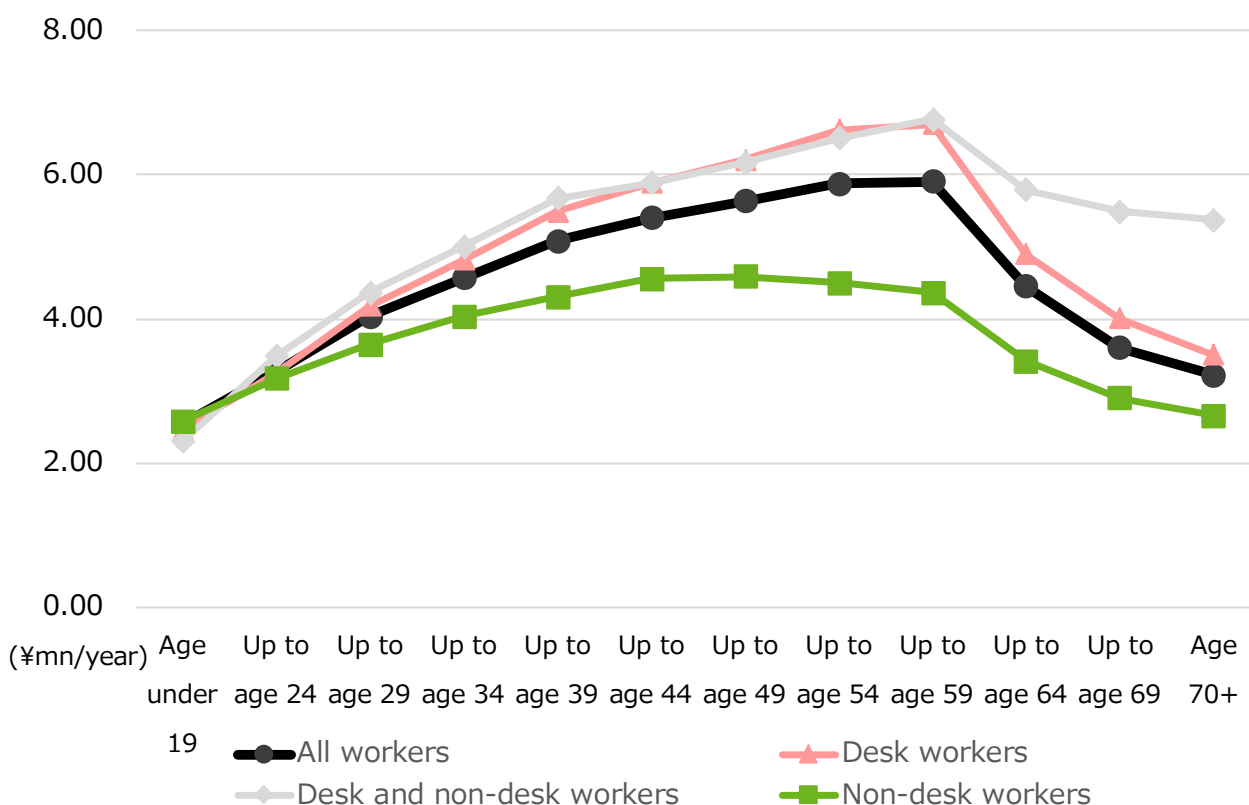
Source: Created by Xymax Real Estate Institute based on the Population Census by the Ministry of Internal Affairs and Communications.

## (2) Issues of non-desk workers

### ① Relatively low wages

Figure 5 shows total annual wages by age and occupational category. According to this chart, the wages of non-desk workers fall below the overall average from around the age of 30. Furthermore, while the overall average wage peaks in the late 40s and the 50s, the rise in the wage profile of non-desk workers is mild, and the wage level is relatively low.

Figure 5: Total Annual Wages by Occupational Category



Source: Created by Xymax Real Estate Institute based on the 2022 Basic Survey on Wage Structure by the Ministry of Health, Labour and Welfare.

During the so-called “lost three decades” following the burst of the economic bubble, Japan was the only developed country where wages did not increase. Since 2022, the momentum for wage increases has risen mainly in large companies due to the impact of price increases, but how to raise wage levels in SMEs and for non-desk workers is a major issue for Japanese society.



② Difficult to attract workers (labor shortage)

Figure 6 is the jobs-to-applicants ratio by occupation. It shows that the jobs-to-applicants ratio for clerical work, a typical job for desk workers, was extremely low in pre-pandemic 2019 and 2022, at 0.50 and 0.43, respectively. On the other hand, the ratios for most non-desk jobs were above the overall average. In particular, the ratios for security (7.77 and 6.30), construction and mining (5.23 and 5.05), service (3.59 and 2.86) and packaging (3.01 and 2.47) were more than double the overall average (1.45 and 1.16).

Figure 6: Jobs-to-Applicants Ratio (Permanent Jobs Including Part-Time Jobs)

Desk worker	Non-desk worker	Occupation	Jobs-to-applicants ratio	
			2019	2022
		<Total>	1.45	1.16
○		Administrative & managerial	1.63	1.14
○	○	Professional & engineering	2.18	1.83
○		Clerical	0.50	0.43
○	○	Sales	2.30	1.80
	○	Service	3.59	2.86
	○	Security	7.77	6.30
	○	Agriculture, forestry & fishery	1.56	1.32
	○	Manufacturing process	1.74	1.93
	○	Transport & machine operation	2.63	2.03
	○	Construction & mining	5.23	5.05
	○	Carrying	1.69	1.31
	○	Cleaning	2.22	1.77
	○	Packaging	3.01	2.47

Source: Created by Xymax Real Estate Institute based on the *General Employment Placement Status* by the Ministry of Health, Labour and Welfare

\* [Jobs-to-applicants ratio] Blue: Below overall average; Light red: Above overall average (less than twice the overall average); Red: Above overall average (two or more times the overall average)

The Japanese society is currently moving toward a society with an aging and shrinking population that is unparalleled in the world. The shortage of non-desk workers may become an impediment to the establishment of a sustainable society.

In the medium to long term, productivity improvements from the introduction of AI and DX measures such as digitalization may drastically change the structure of labor supply and demand. DX will not progress uniformly across occupations—some occupations will have an affinity for digitalization, and some will not. The groundwork for DX has been laid for desk work by the IT revolution, paperless initiatives and remote work that have been underway for some time, and the resulting digitalization of information, as well as improvements in telecommunications and computing power. More recently, there has been a remarkable evolution in generative AI, such as text and image generation, which has led to the launch of various services using these technologies. Therefore, there may come a time when there will be a surplus of desk

workers due to improvements in the business productivity of many desk jobs. On the other hand, non-desk workers, for whom there is currently a shortage, may face an even more significant shortage in Japan, where the population is aging and shrinking, as some occupations are likely to require human labor despite DX support in the future.

## 6. Summary

In this report, we presented the definition, actual state and issues of non-desk workers, who are at the center of the labor shortage problem, from both qualitative and quantitative perspectives. In terms of the actual state, we confirmed that non-desk workers account for more than half of all workers, that there is a high proportion of older people among non-desk workers, and that there is a high proportion of part-time workers. In terms of issues, we confirmed that the wages are relatively low and that it is difficult to attract workers.

In the future development of this series, we intend to consider future societal losses (the possible shape of society) based on the estimated supply-demand gap for each occupation and proposed measures to solve future labor shortages. As we track changes in social trends, we will also delve deeper into specific themes and publish information as appropriate.

Xymax Real Estate Institute has conducted many studies and released reports on the work styles and workplaces of desk workers (office workers). In this project, we plan to focus on non-desk workers as we consider solutions to the labor shortage problem.

The percentage mix in the charts contained in this report is rounded to the first decimal place and, therefore, may not add up to 100%.

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